ILLINOIS FAIRS & FESTIVALS

EDUCATOR'S GUIDE

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Illinois State Board of Education

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AUGUST 2019

WELCOME ONE & ALL!

ILLINOIS HAS BEEN HOME TO FAIRS AND FESTIVALS IN EVERY SINGLE COUNTY ACROSS OUR GREAT STATE FOR MORE THAN 160 YEARS.

The Prairie State also hosts two state fairs that showcase the fun and opportunity Illinois has to offer – the Illinois State Fair in Springfield and the Du Quoin State Fair in Southern Illinois. Our county and state fairs highlight agriculture as a major industry in our region. However, as you explore the attractions and activities on the fairgrounds, you might be surprised to discover connections to career possibilities across many diverse sectors.

From history to architecture, manufacturing to engineering, food service to health care, journalism and the arts, our state's fairs and festivals offer inspiration to spark every student's interests. This guide can help students discover dozens of in-demand careers right here in Illinois through interactive and engaging lessons aligned to the Illinois Learning Standards.

The activities in this guide provide students, families, and teachers a new way to experience Illinois' fairs and festivals. You can visit www.enjoyillinois.com and choose "Plan Your Trip" to search for events, such as fairs and festivals, near your school. I hope you enjoy the many ways to "Learn Here, Work Here, and Play Here" that are contained in this guide and that you enjoy the learning opportunities available at Illinois' fairs and festivals!

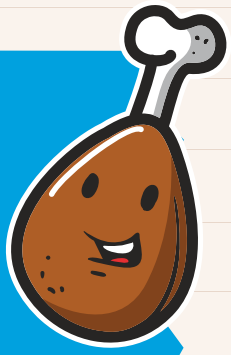
Dr. Carmen I. Ayala

State Superintendent of Education

GRADES K-4

FOOD AND NUTRITION

GOLDEN ABE COMPETITION



Discovering the next WILD concoction at the Illinois State Fair is the main goal of the Golden Abe's Fantastic Fair Food Competition, graciously sponsored by the Springfield State Journal-Register. The Golden Abe's Competition pits vendor against vendor, allowing vendors to showcase their talents and imagination. Any food vendor at the 2019 Illinois State Fair can enter this competition. As fairgoers walk around the fairgrounds, be on the lookout for the past Golden Abe's award winners. They will have signs posted at concession stands, showing off their Illinois State Fair accomplishments!

What NEW food might attract fairgoers this year and win the 2020 Golden Abe?

How do vendors attract people to try their NEW food?

ACTIVITY

The goal is to be a new favorite to add to fair goers "MUST HAVE" list of fair food and win the Golden Abe bobblehead for 2020.

1. With your team, decide on a yummy food to be your State Fair Food.

2. Many of the foods that have won in the past are reworkings of other foods, such as fried oreos or a hot beef sundae (a sandwich designed like a sundae).

3. Design your food that you hope will win the Golden Abe for 2020. Write a list of ingredients and a recipe for your creation. Be prepared to share with the class. Then sketch out a triptych to use in advertising.

4. A triptych is a series of three different artworks that are hung together as one piece.

5. Your first artwork would be a drawing of the food before it is prepared.

6. The second work would be a drawing of the food while it is being prepared.

7. The third work would be a drawing of the food ready for consumption.

8. When you are finished, share your recipe and triptych with your classmates and compare yours to theirs. How are they the same? How are they different? What might you do differently next time? Would you try this new food? Why or why not?

Essential Employability Competency Skills

Teamwork, Communication, Problem Solving, Decision Making
Critical Thinking, Planning and Organizing

Academic Standards

W.K-4.4, W.K-4.7, SL.K-4.1, SL.K-4.4, W.K-4.4, W.K-4.7, SL.K-4.1, SL.K-4.4

Resources

Article about the Golden Abe: https://www2.illinois.gov/statefair/food/Pages/Golden-Abe.aspx
Crayola for Teachers' Miniature Triptych:https://www.crayolateachers.ca/lesson/miniature-triptych-colour-shape-horizon/

Career Connections

Business, Sales, Marketing, Agriculture, Food, Natural Resources

GRADES 5-8

FOOD AND NUTRITION

GOLDEN ABE COMPETITION

While the food at the fair may be delicious, it isn't always the healthiest. From deep fried oreos to cheese curds, it is very easy to consume a lot of calories while noshing at the fair! In this lesson, students will explore how many calories are in their favorite fair fare and then calculate how many minutes of activity it would take to burn off those calories.

ACTIVITY

This activity could be done individually, in partners, or in small groups.

1. Pick your favorite fair food item. (Example: Corn Dog)
2. Look up how many calories are in that food item. (Corn Dog = 460 calories)
3. What percent of a 2,000 calorie diet would that food item cover? (Corn Dog = 23%)
4. How many minutes of different activities would it take to burn off those calories? (It would take 99 minutes of walking at 3.5 mph, 47 minutes of running/jogging at 5 mph, or 63 minutes of playing basketball to burn off the calories in one corn dog.)
5. Create a poster that will inform fairgoers and help them make healthy choices.
6. Present your poster, and teach your classmates what you learned.

Essential Employability Competency Skills
Perseverance, Critical Thinking, Active Listening, Clear Communication

Career Connections
Agriculture, Food, Natural Resources, Health

Academic Standards
6.RP.3 , 7.RP.3, MP1, MP4, MP8

Resources
Fat Festival? Calories in Food at the Fair: https://www.webmd.com/diet/features/fat-festival-calories-food-fair#1
How many calories does physical activity burn?: https://www.choosemyplate.gov/physical-activity-calories-burn

GRADES 9-12

FOOD AND NUTRITION

GOLDEN ABE COMPETITION

Everyone who attends the fair looks forward to eating some of the delicious treats. In this activity, students will dream up a new treat to serve at the fair, create a recipe for it, calculate what it costs to make the item, and finally determine the menu price for their creation.

This activity could be done individually, in partners, or in small groups.

1. Dream up a food item that fairgoers would love to devour, and create a recipe for the item.
2. Using the Kitchen Calculations or Recipe Costing resources on page 6, determine the cost to make one of your food items (looking up the As-Purchased Cost on an online grocery shopping site and accounting for trim waste referencing the Common Product Yields resource on page 6).
3. Once you've calculated the cost of your item, determine the menu price of your item. The Guidelines for Concessions Markup resource on page 6 may help you determine how to set your selling price.
4. Discuss as a class all the factors that influence the price that vendors set for their menu items and the price that consumers are willing to pay for items.
5. Present your creations, the cost to create, and the menu price to the class. Compare, contrast, and discuss the profit margins of the different items.

Essential Employability Competency Skills
Perseverance, Effective and Cooperative Work, Active Listening, Clear Communication

Academic Standards
NQ.1, NQ.2, MP1, MP4, MP6

Resources
Kitchen Calculations: https://www.ciachef.edu/uploadedFiles/Pages/Admissions_and_Financial_Aid/Educators/Educational_Materials/Technique_of_the_Quarter/techniques-calculations.pdf
Culinary Math: Recipe Costing: https://library.vcc.ca/learningcentre/pdf/vcclc/Culinary Math-RecipeCosting.pdf
Common Product Yields: https://www.usfoods.com/content/dam/dce/pdfs/Your-Business/Easy-Ordering/MPP_Online-Common_Product_Yields_and_Conversions.pdf
The Guidelines for Concessions Markup: https://yourbusiness.azcentral.com/guidelines-concessions-markup-27075.html

Career Connections
Agriculture, Food, Natural Resources, Business, Sales, Marketing

GRADES K-4

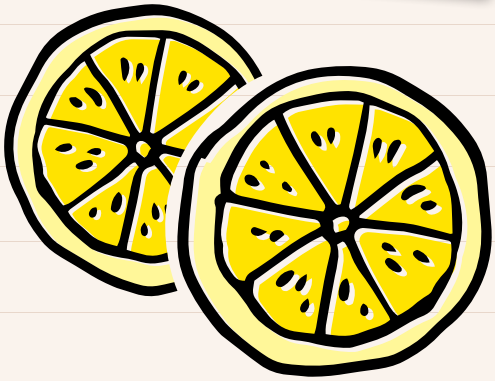
FOOD AND NUTRITION

LEMON SHAKE UPS

Lemon Shake Ups are a **TRADITIONAL** state fair drink! It seems lemon shake ups are sold at many fairs, but especially at the Illinois State Fair. There is not much history that can be found when or where lemon shake ups first started. Some people insist that adding the lemon rinds to the shaking process gives the drink an extra lemony flavor. But how are they made?

DRIVING QUESTIONS

- What is the list called in a recipe?
- Can you retell the ingredients and recipe to someone else?
- How are lemon shake ups different than lemonade? Describe using taste words.
- How much sugar would you need for two, four, or ten shake ups?
- What happens to the ice when water is poured over it?
- Where does ice go when it melts?
- How long did you shake it? If you shake it longer or shorter, does it change the flavor?
- How would the recipe change if you skipped an ingredient, such as the lemon or the sugar?



ACTIVITY

MAKE & SHAKE

When the right amount of each ingredient is combined, shake like crazy to mix all the flavors, dissolve the sugar, and make it nice and cold.

More or less sugar can be added, depending on how you like them.

WHAT YOU'LL NEED

A 12-ounce cup with lid
A wooden spoon
A lemon, cut in half
Granulated, white sugar
Ice
Water

FOLLOW THE RECIPE:

1. Get a 12 oz. cup with a lid.
2. Measure ¼ cup of sugar and place into the cup.
3. Cut one lemon in half around the middle.
4. SQUEEEEZE the lemon into the cup until all the juice is out.
5. Put one half of the lemon rind in the cup. Using a wooden spoon handle, smash the lemon rind a few times.
6. Fill the cup with ice. You must do this before adding water!
7. Add water to fill the glass.
8. Close lid and shake, shake, shake!

To make this a bit different each time, add in different fruits like strawberries, raspberries or watermelon!

Career Connections
Agriculture, Food, and Natural Resources

Essential Employability Competency Skills
Communication: Verbal & Written, Critical Thinking

Academic Standards
CCRA.1 (ELA), CCRA.4 (ELA), CCRA.7 (ELA)

Resources
Lemon Shake Up History: https://www.10best.com/interests/food-culture/what-is-lemon-shake-up-why-is-it-good/
Lemon Shake Up Recipe: https://www.geniuskitchen.com/recipe/lemon-shake-up-86340

GRADES 5-8

FOOD AND NUTRITION

LEMON SHAKE UPS

DRIVING QUESTIONS

- Can you retell the ingredients and recipe to someone else in the order provided? If you missed a step, how would that change the outcome of the recipe?
- How are lemon shake ups different than lemonade? Describe using the senses.
- What might be the rationale for smashing the lemon rind? Create this drink without smashing the rind and compare/contrast the results.
- If you were making this recipe for 25 classmates, how much of each item in the list would be needed?
- How could you convert this recipe to make one quart? How would you convert for two quarts?
- Shake the drink for 15 seconds and taste. Shake again for 30 seconds and taste. Shake one last time for another 30 seconds
  and taste. Did shaking it longer appear to change the flavor?
- How might additions of any of the variations suggested at the end of the recipe call for a change in the original recipe?

ACTIVITY

See K-4 activity on previous page.

Essential Employability Competency Skills
Communication: Verbal & Written, Problem Solving, Critical Thinking

Academic Standards
CCRA.1 (ELA), CCRA.4 (ELA), CCRA.7 (ELA)

Career Connections
Agriculture, Food, Culinary Arts and Natural Resources

Resources
Lemon Shake Up History: https://www.10best.com/interests/food-culture/what-is-lemon-shake-up-why-is-it-good/
Lemon Shake Up Recipe: https://www.geniuskitchen.com/recipe/lemon-shake-up-86340

GRADES 9-12

FOOD AND NUTRITION

GOLDEN ABE COMPETITION

One of the most **POPULAR** drinks at the Illinois State Fair are lemon shake ups. The classic version contains four basic ingredients: lemons, sugar, water and ice. The name lemon shake up provides another key part of making the fairgoer favorite: shake up. Each glass must be vigorously shaken to dissolve the sugar, mix the ingredients and provide a cold refreshing treat on a hot fair day. But what if there was a shortage of lemons? Could a new refreshing drink take the lemon shake up's place?

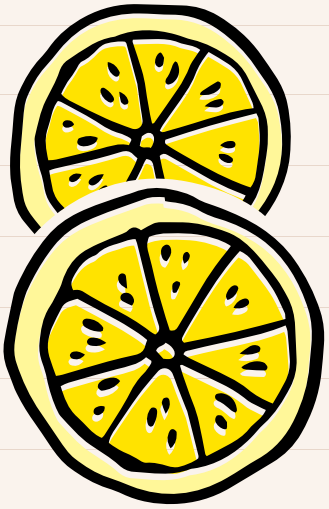
DRIVING QUESTION

How can we convince traditional fairgoers to try an alternative to a lemon shake up and still make a profit?

ACTIVITY

There is a shortage of lemons, and lemon shake ups will not be available at the Illinois State Fair. In a small group, create a new and refreshing fair drink. When developing the treat, keep in mind the following:

- The drink must include ingredients that are affordable to fairgoers.
- The drink must include ingredients that allow you to make a profit.
- The drink must be able to be made quickly to allow for serving a large number of fairgoers.
- Devise an advertising plan with a slogan that will encourage those who LOVE lemon shake ups that your drink is worth trying.
- The group must make a sample of the new drink. Find a sample group to taste the drink and then ask for feedback from the group as to what improvements to make.
- Once the drink is finalized, student groups must create a written blurb that will be used in creating advertising.
- Each group can decide how they are going to advertise the new drink at the fair.



Career Connections
Agriculture, Food, and Natural Resources, Business, Sales, Marketing

Essential Employability Competency Skills
Teamwork, Communication, Problem Solving, Decision Making Critical Thinking Planning and Organizing

Academic Standards
W.9-10.4, W.9-10.7, SL.9-10.1, SL.9-10.4, W.11-12.4, W.11-12.7, SL.11-12.1, SL.11-12.4

Resources
Lemon Shake Up Recipe: https://www.geniuskitchen.com/recipe/lemon-shake-up-86340

GRADES K-2

RIDES

ROLLER COASTERS & SLIDES

ACTIVITY

NOODLE ROLLER COASTERS OR GIANT SLIDE

Using either foam pipe tubing or pool noodles, cut at least half lengthwise to make tracks. (Pre-cut the tubing/noodles lengthwise for younger grades.) Leave some uncut to form tunnels for the coasters. Students create roller coaster tracks for marbles to roll on. Tape tubes together with masking tape and use boxes to create hills for the track to run on. Place a cup at the end of the track to catch the marble when the ride ends.

DRIVING QUESTIONS

- At what point is the marble the highest?
- How high do you have to make the starting point of your roller coaster for the marble to "loop-the-loop"?
- What happens if we use marbles of different diameters? Different masses?
- How does the starting point height requirement change when the loop diameter increases? Decreases?

Career Connections
Manufacturing, Engineering, Technology and Trades

Essential Employability Competency Skills
Critical thinking, Clear communication, Perseverance, Effective and cooperative work

Academic Standards
W.K.1(1,2), K.MD.1(1,2), K.G.5, K-PS2-2, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3, SEL 2.1, SEL 2.2, SEL 2.3, SEL 2.4

Resources
"What is Kinetic and Potential Energy" Video: https://www.youtube.com/watch?v=Ehx1P4adv6I
"Roller Coaster Design" Video: http://illinois.pbslearningmedia.org/resource/midlit11.sci.phys.maf.energy/roller-coaster-design/
Build a Roller Coaster: http://www.learner.org/interactives/parkphysics/coaster.html

GRADES 3-8

RIDES

ZIP LINE TRANSPORTATION

ACTIVITY

Design and build a vehicle that can carry a ping pong ball from the top of a zip line string to the bottom. The ball can switch zip lines at multiple points in the classroom.

When constructing the zip line, make sure the line starts at least two feet higher than where it ends. (Try constructing the zip line with the back of a chair as the top and a stack of books at the bottom.)

Choose other items to "zip" along the line, such as Flat Stanley,action hero toys, and pumpkin candies. Change up the materials. See who can be the slowest to descend.

Students also can create a story about why the item "zipping" needs to move in this manner. Where were they going? Slow or fast? Why?

DRIVING QUESTIONS

- How would the materials available carry a ping pong ball down the line?
- How will the carrier stay on the line?
- What should be in contact with the zip line so that the carrier slides quickly?
- What if the ball drops off while zipping?
- What if the ball stops halfway down?
- What can you change to make the ball travel faster or slower?
- When designing a zip line for people to use, what are some important things to consider?
- What safety features could be added to the zip line?

Essential Employability Competency Skills
Critical Thinking, Clear Communication, Perseverance, Effective and Cooperative Work

Academic Standards
W.3.3, 3.MD.4, 3-PS2-1, 3-PS2-2, 3-5-ETS1-1, 3-5-ETS1-3, W.4.3, 4-PS3-1, 4-PS3-3, W.5.3, 5-PS2-1, W.6 (7,8).3, MS-PS1-4, MS-PS2-2, MS-PS2-4, MS-ETS1-1, MS-ETS1-3, MS-ETS1-4, SEL 2.1, SEL 2.2, SEL 2.3, SEL 2.4

Career Connections
Manufacturing, Engineering, Technology and Trades

Resources
Zip Line Activity: https://pbskids.org/designsquad/parentseducators/resources/zip_line.html
Maze Game: http://phet.colorado.edu/en/simulation/maze-game

GRADES 9-12

RIDES

AMUSMENT PARK RIDE DESIGN

DRIVING QUESTIONS

How is conservation of energy used in designing an amusement park ride?

How are Newton's laws of motion used in designing an amusment park ride?

How is conservation of momentum used in designing an amusement park ride?

WHAT IS THE ACCELERATION?

How much work is done in lifting the ride to the top? What average power is developed by the motor? Compare potential and kinetic energies at various points along the ride (top, bottom, middle).

ACTIVITY

Students will research various types of amusement park rides and use their findings to design a feasible ride of their own. They will summarize their findings and present their ride design to the class. Each student will then write a persuasive letter to a local amusement park describing the reasons their ride design is the best.

Students should be introduced to this activity at least several weeks before the due date to allow for adequate time to research and develop their ideas.

A simulation or video demonstrating the physics of amusement park rides can be used to introduce the activity. Some suggestions: computer simulations, iPad apps such as Coaster Physics, a field trip to a local amusement park, videos about ride design or a guest speaker from the industry.

The local amusement park, Fun Spot, is soliciting bids for a new ride for its ongoing expansion. Students will select a ride type (roller coaster, flume, swing/rotational, free fall, or pendulum) and work with a group to investigate the underlying physics involved, and use your results to design a safe, functional and efficient ride. Groups may use any print or web-based materials to investigate their ride. Each group will present their findings to the class in an oral presentation with visuals of their choice.

Students may select their group topic or presentation method.

GROUP ONE Roller Coaster **GROUP TWO** Flume **GROUP THREE** Rotational Motion
GROUP FOUR Free fall **GROUP FIVE** Pendulums

Each group must investigate their chosen ride and design a safe and efficient ride for Fun Spot. Each ride type will have specific criteria to meet and questions about the design to answer. In addition, each group must provide a calculation showing the maximum speed and acceleration of the ride and detailed explanations of how these were determined, using the specifications of their ride design. All groups must include at least one appropriate free body diagram, and at least two appropriate energy diagrams. Groups will present their results in an oral presentation with visuals of their choice (power points, brochures, etc.)

INDIVIDUAL WORK Each student must write an individual summary, including details from their group work. In addition, each student must write a Persuasive Letter to the Fun Spot's Board of Directors describing reasons a specific design should be chosen, including details from both their work AND other groups presentations.

RIDE CALCULATIONS

$$V = \frac{S}{T}$$

Rotational Motion: Carousel

- Calculate angular and tangential speeds
- Calculate centripetal and tangential acceleration
- Determine the centripetal force for riders on the inside and the outside of the platform
- Determine the coefficient of friction required for a rider near the outside

Rotational Motion: Swings (Flying Trapeze)

- See calculations for Carousel
- Calculate tension in the chains
- Calculate G forces on riders

Roller Coaster

- Calculate speed at various points, such as at the bottom of the first hill, halfway up the second hill, at the top of the loop, etc.
- Compare calculated speeds due to speeds predicted by energy conservation techniques
- Calculate acceleration between various points
- Calculate potential/kinetic energies at various points
- Determine energy lost due to friction
- Calculate G forces on riders at various positions
- Calculate angular speeds or acceleration for loops/curves

Flume/Water Ride

- Calculate average speed and acceleration during the drop
- Determine speed as the boat hits the water
- Determine speed of the boat as it leaves the pool
- Calculate the force of water on the boat slowing it down
- Determine energy lost by the boat when it hits the water
- Determine maximum speed or height for a drop of water when the boat hits the pool

Pendulum

- Time to complete one full loop
- Speed at the bottom of the arc (assuming the ride comes to a stop at the top)
- Work done lifting riders to the top
- Calculate potential/kinetic energies at various points

Free-Fall

- What is the average speed of the ride (from top to bottom)?
- What is the final speed at the bottom of the ride?

Career Connections
Manufacturing, Engineering, Technology and Trades

Essential Employability Competency Skills
Critical Thinking, Clear Communication, Perseverance, Effective and Cooperative Work

Academic Standards
RST.9-10.7, RST.11-12.7, WHST.9-10.2, WHST.11-12.2, WHST.9-10.9, WHST.11-12.9, RST.9-10.7, RST.11-12.7, HS-ETS1-2, HS-ETS1-3, HS-ETS1-4, HS-PS3-4, HS-PS2-6, A.CED.4, N.Q.3, N.VM.3, SEL goal 1, 2 & 3

Resources
Amusement Park Physics: http://www.cpalms.org/Public/PreviewResourceLesson/Preview/28888
Energy Skate Park Simulation: http://phet.colorado.edu/en/simulation/energy-skate-park
Collison Lap Simulation: http://phet.colorado.edu/en/simulation/collision-lab
NASA CurveBall Simulation: http://www.grc.nasa.gov/WWW/K-12/airplane/foil2bk.html
Ladybug Motion 2D Simulation: http://phet.colorado.edu/en/simulation/ladybug-motion-2d
Maze Game Simulation: http://phet.colorado.edu/en/simulation/maze-game

GRADES K-4

MUSIC & ARTS

MAKING MUSIC WITH WATER

Music and arts have always been a **LARGE PART** of the Illinois State Fair.Though many people immediately think of the Grandstand events, which have been occurring at the fair since 1946, there are numerous other opportunities to engage with the arts at the fair. Whether competing or viewing, there are exhibitions available in both the performing arts and the visual arts. From obvious to obscure, fairgoers can engage with singing, dancing, photography, sculpture, painting, digital imagery, and even floral design, sewing, crafts, and cake decorating!

DRIVING QUESTIONS

Why do you think each glass makes a different sound?

How did you decide what type of music to play?

How could I change the sounds coming from the glasses?

How do musicians decide what to create?

ACTIVITY

MAKING MUSIC WITH WATER

Students will experiment with making their own special music by turning glasses of water into instruments.

MATERIALS NEEDED: One group of five needs five drinking glasses or glass bottles, water, and a wooden stick.

1. Begin by reading *Water Dance* by Thomas Locker to start a discussion about water. This book is full of art, poetry, nature and science all combined into a dance about our water cycle.
2. Divide the students into groups of five and give each group five glasses with different amounts of water in each glass. Students will experiment with a wooden stick and observe the different sounds coming from each glass.
3. Each group will spend time trying to make a very short song or dance with their glasses of water and wooden sticks.
4. It's Showtime! Each group will play their song and dance in front of the class by using their glasses of water as musical instruments.
5. Once everyone has performed, have a class discussion about the different tones, vibrations and sound waves.

Each of the glasses will have a different tone. The glass with the most water will have the lowest tone, while the glass with the least water will have the highest. Small vibrations are made when you hit each glass with the wooden stick. This creates sound waves which travel through water. More water means slower vibrations and a deeper tone.

Possible Reading Materials:

IL Ag In The Classroom's Water Ag Mag
Water by Melissa Stewart
ISBN-13: 9781426314742
Water Dance by Thomas Locker
ISBN-13: 9780152163969
Water Is Water by Miranda Paul
ISBN-13: 9781596439849

Career Connections
Arts and Communication

Essential Employability Competency Skills
Teamwork, Communication: Verbal, Critical Thinking, Adaptability and Flexibility

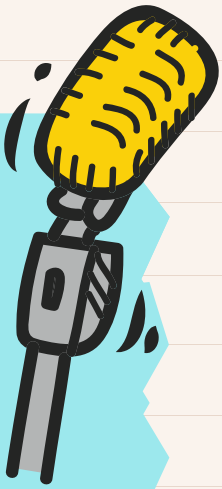
Academic Standards
ELA: RI.3.10; SL.3.1; SL.3.2, Science: Waves and their Applications: 1-PS4-1, Fine Arts-Music: Organize and develop artistic ideas and work; Synthesize and relate knowledge and personal experiences to make art.

Resources
IL Ag in the Classroom's Making Music with Water Activity (page 15): http://www.agintheclassroom.org/TeacherResources/Lesson%20Booklets/Summer%20Reading%202019.pdf

GRADES 5-8

MUSIC & ARTS

MUSICAL ART



Music and arts have always been a **LARGE PART** of the Illinois State Fair. Though many people immediately think of the Grandstand events, which have been occurring at the fair since 1946, there are numerous other opportunities to engage with the arts at the fair. Whether competing or viewing, there are exhibitions available in both the performing arts and the visual arts. From obvious to obscure, fairgoers can engage with singing, dancing, photography, sculpture, painting, digital imagery, and even floral design, sewing, crafts, and cake decorating!

DRIVING QUESTIONS

- Why did different types of music make you move the pencil differently?
- How did different types of music make you feel?
- How are music and art connected?
- How would your art have been different if we played different styles of music instead?
- How is your piece different and similar to that of your classmates?
- Why might pieces differ even though you all listened to the same music?
- How do individuals choose music to experience?
- How do we discern the musical performer's emotions, thoughts, and ideas?
- How do musicians make meaningful connections to creating, performing, and responding?

ACTIVITY

MUSICAL ART

By drawing or painting to music, students will learn to identify the similarities between music and art.

WHAT YOU NEED:

Large paper (14 x 20), music player (e.g., CD player, smart phone, or computer), various music styles (e.g., classical, pop, country, rock), pencils, pencil crayons

WHAT YOU DO:

1. Students place the tip of their pencil in the middle of the paper and close their eyes.
2. With their eyes closed, the teacher begins playing a song on the music player.
3. Students then begin moving their pencils in movements on the page that mimic the instruments or rhythms of the music pieces. (e.g., a drum solo might be penciled as a jagged line like a heart rate monitor).
4. The teacher alters the music from style to style while the students keep their eyes shut.
5. Eventually (when most of the page is covered in lines) the students are told to open their eyes and to trace (darkly) all the penciled lines with a black pencil or crayon.
6. Finally, students are instructed to color each individual shape (that has been created by the penciled lines) in such a way that none of the same colors are touching each other.

NOTE: Usually students enjoy this activity VERY much. Try a couple of practice times before drawing the final piece.

Career Connections
Arts and Communication

Essential Employability Competency Skills
Communication: Verbal, Critical Thinking, Adaptability and Flexibility

Academic Standard
Fine Arts-Visual Arts: Generate and conceptualize artistic ideas and work; Organize and develop artistic ideas and work; Perceive and analyze artistic work;Fine Arts-Music: Perceive and analyze artistic work; Construct meaningful interpretations of artistic work; Synthesize and relate knowledge and personal experiences to make art

Resources
Kinder Art's Musical Art Lesson: Musical Art https://kinderart.com/art-lessons/painting/musical-art/

GRADES 9-12

MUSIC & ARTS

CONCERT REVIEW

The GRANDSTAND at the Illinois State Fair in Springfield was rebuilt in 1927 and is known for holding an assortment of concerts, as well as horse and automobile races. The 2019 line-up for concerts is designed to provide something for everyone. Choose a concert to go to, and write a review of the performance.

DRIVING QUESTIONS

What makes a concert a success in an audience members' eyes?

What makes an album a success?

ACTIVITY

Look at the list of concerts provided for the 2019 Illinois State Fair. If students are able to go to one of these concerts, have them write a concert review. If they are not able to attend, they can review a concert that they have attended in the past or watch a musical performance online. (Descriptions of the venue may be omitted for reviews of concerts watched online.) Collect samples of theatre reviews from the internet, newspapers, or magazines. Review the major elements of a theatre review (e.g., description, analysis, and interpretation). Introduce the components that are required of the review such as:

Tell students that they will be writing a review of a concert performance for a newspaper. The paper has a 400-word limit and a deadline of noon the day following the performance.

INTRODUCTION: The introduction should include the title, venue, and date of the concert and the names of the musicians. Include the location and venue to give readers unfamiliar with the area a better idea of where the concert took place. Note what time the concert took place.

DESCRIPTION: The main body of the concert review should include brief discussions of each piece played during the concert. The description should include:

- The title of each piece and the name of the composer and/or musician;
- Basic and brief information about the songs and your reaction to them.

EVALUATION: Based on the notes taken, mention what made attending the concert worthwhile. What about the experience was new or different for you? Expand on your writing by augmenting it with relevant facts, such as the history of the band or the effect the venue had on the performance. Be honest about whether you individually enjoyed the concert and how, in your opinion, the audience as a whole responded. Also, include in your review the acoustic quality of the music.

CONCLUSION: The conclusion should summarize your overall impression of the concert. Do not include any new information (for example, upcoming events) in the conclusion.

HAVE PARTICIPANTS SHARE THEIR REVIEWS WITH PEERS AND/OR IN AN ONLINE FORMAT.

Essential Employability Competency Skills
Communication, Decision Making Critical Thinking, Planning and Organizing

Academic Standards
W.9-12.3, W.9-12.3a, 3b, 3c, 3d, 3e, W.9-12.4, 5, 6, SL.9-12.4

Career Connections
Arts and Communication

Resources
2019 Illinois State Fair Concerts: https://www2.illinois.gov/statefair/entertainment/grandstand/Pages/default.aspx
English Learner Resources for Writing a Concert Review: https://www.eslprintables.com/teaching_resources/tests_and_exams/reviews/Writing_tips_5_A_concert_revi_377645/

GRADES K-4

FAIR ANIMALS

HATCHING CHICKS

The FIRST Illinois State Fair opened on October 11, 1853, with an admission of 25 cents. The attractions included cattle, horses, and sheep venues, among displays of reapers, mowers, farming tools, and a variety of corn planters. In 1965, the Illinois Legislature passed an act creating the Illinois State Fair Agency. The main purpose of the Agency remained what had been the goal of the Fair throughout its history: to promote improved methods of agriculture, encourage increased yields and the raising of improved breeds of livestock, and to acquaint farmers with the latest implements and machinery.

DRIVING QUESTIONS

Possible questions to ask students during the notice and wonderings.

List student responses:

1. What animals do you see at a fair?
2. Do these animals produce anything?
3. Why do we raise animals?
4. What type of careers are associated with raising animals?

ACTIVITY

HATCHING CHICKS!

This activity makes a great complement to a classroom hatching project. If you are going to hatch live chicks in your classroom, be sure to time the Countdown to Hatch project to your hatching date so that students can envision what is going on inside the real eggs even though the eggs don't seem to change on the outside.

- Share the *Hatching Science: 21 Days of Discovery* video with your class.
- Prior to class, use a permanent marker to number the outside of the plastic eggs 1-21. Copy the Countdown to Hatch inserts so that the egg illustrations are on one side of each page and the milestone descriptions are on the other side. Cut apart the egg illustrations and place each one in the corresponding numbered eggs. Once the eggs are assembled, each egg will contain a picture of the developing chick with a summary of the milestones the chick has achieved on or around that day.
- Open one egg each day over the course of 21 days. You can choose to open the weekend eggs the Friday before or the Monday after each weekend.
- On day 21, when you open the final egg, have a "hatch day" party for the new chick! (The term "birthday" is reserved for mammals.) Discuss the process that you have observed over the last few weeks and what the chick's needs will be now that it has hatched. Chicks need heat until they get big enough to make their own, as well as food and water to stay alive. On farms, people provide these things, but mother hens can also keep the chicks warm and guide them to food and water. Additionally, chicks are born with the instincts to automatically know how to eat and drink. Instincts will also help them to locate the things that will meet their needs.
- Note: If you are hatching live chicks, set up a brooder box with a heat lamp, food, and water as part of the party and discuss why these items are important parts of the chick's habitat.
- If you are not hatching live chicks, consider showing parts of a *Chick Hatching* video so students can observe chick behavior.
- To finish up the project, go through the 21-day countdown and pictures again and ask students to recall the process. What were the most exciting parts? What did they learn about embryo development and living things? Now that the chicks have hatched, what physical traits will help them stay alive?

Career Connections
Agriculture, Food, and Natural Resources

Essential Employability Competency Skills
Teamwork, Communication, Problem Solving, Decision Making, Critical Thinking, Planning and Organizing

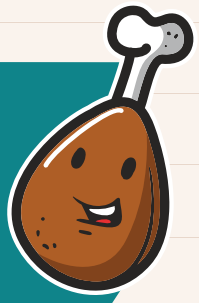
Academic Standards
College and Career Readiness (CCR) Anchor Standards for Language, CCR.L.4, CCR.L.6,
Next Generation Science Standards (NGSS) Life Science, K.LS1-1, 1.LS1-2, 3.LS1-1

Resources
National Agricultural Literacy Curriculum Matrix's Hatching Science with Classroom Chicks (Grades K-2): https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=469
Learning Science through Inquiry Teacher Guide for the Life Cycle of a Chicken: http://www.purdue-scientificliteracyproject.org/LinkClick.aspx?fileticket=3Wc%2BIhQTBwM%3D&tabid=67&mid=657
Other Fun K-2 Resources: https://schoolgardens.arizona.edu/sites/default/files/curriculum/K-2%20Green%20Academy%20Mini%20Lessons.pdf
Teachers guide to hatching eggs in the classroom:https://aglifesciences.tamu.edu/posc/wp-content/uploads/sites/20/2012/08/E-635-Hatching-Eggs-in-the-Classroom-A-Teachers-Guide.pdf

GRADES 5-8

FAIR ANIMALS

ORIGINS OF FOOD



The FIRST Illinois State Fair opened on October 11, 1853, with an admission of 25 cents. The attractions included cattle, horses, and sheep venues, among displays of reapers, mowers, farming tools, and a variety of corn planters. In 1965, the Illinois Legislature passed an act creating the Illinois State Fair Agency. The main purpose of the Agency remained what had been the goal of the Fair throughout its history: to promote improved methods of agriculture, encourage increased yields and the raising of improved breeds of livestock, and to acquaint farmers with the latest implements and machinery.

DRIVING QUESTIONS

Possible questions to ask students during the notice and wonderings. List student responses:

1. What animals do you see at a fair?
2. Do these animals produce anything?
3. Why do we raise animals?
4. What type of careers are associated with raising animals?

ACTIVITY

The origin of all food can be traced back to the soil. For food to go from the soil to our plates, it must go through a process known as a food system. A food system is the process of food production to consumption. Explore the food systems of the Illinois State Fair with this activity.

- Ask students what food they can find at the State Fair. Ask them what ingredients make up the food and how it was prepared. For example, a cheeseburger consists of a bun, meat, tomato, lettuce, and cheese.

- Explain to your students that all food originates from the soil:

  - Bun: Flour, wheat, plant, seed, soil
  - Meat: Cow, grass/grain, seed, soil
  - Tomato and lettuce: Plant, seed, soil
  - Cheese: Milk, cow, grass/grain, seed, soil

- Display the Food System Chain graphic, and explain that before a cheeseburger can be sold at the fair it will go through the Food System Chain. Briefly review each part of the chain and the questions provided with students.
- Cut out the Food Farm Connection Matching cards and have students walk around the classroom and match their product to the correct producer.
- Provide each student a copy of the State Fair Map. Ask students to highlight the following fair buildings; C-Feed & Bedding Barn, H-IL Dept of Agriculture Farmer's Market Tent, RA-Livestock Center, L-Cattle Barns, K-Dairy, RA- Swine Barn, Sheep Barn, Goat Barn, F-Food-A-Rama.
- Place students in small groups to create an illustrated map that shows all the buildings that would be used to create a fair food. Provide students with a large piece of paper to draw their food map. Have students use their state fair maps to create simple pictures to represent the buildings and the ingredients for their fair food. Inform them that their illustration should show how each building/ingredient is related to the creation of their State Fair food. You might want to instruct them to start with building C or H and end at F.

Career Connections
Agriculture, Food, and Natural Resources

Essential Employability Competency Skills
Teamwork, Communication: Verbal & Written, Problem Solving, Decision Making, Critical Thinking, Planning and Organizing

Academic Standards
SL.K.5, Next Generation Science Standards (NGSS), K-ESS3-1., College and Career Readiness (CCR), Anchor Standards for Speaking and Listening, CCRA.SL.1, CCRA.SL.2, CCRA.SL.4, CCRA.SL.5

Resources
Healthy Planet USA: From Farm to Fork: https://healthyplanetus.org/healthy-growing/resources/garden-based-lessons/lesson-1-from-farm-to-fork/
National Agricultural Literacy Curriculum Matrix's Who Grew My Soup? (Grades 3-5): https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=57
National Agricultural Literacy Curriculum Matrix's Food Systems Feed the World: https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=413&author_state=0&grade=6
2019 Illinois State Fair Map: https://www2.illinois.gov/statefair/info/Pages/Maps.aspx

GRADES 9-12

FAIR ANIMALS

CAREERS IN AGRICULTURE SCIENCE

The FIRST Illinois State Fair opened on October 11, 1853, with an admission of 25 cents. The attractions included cattle, horses, and sheep venues, among displays of reapers, mowers, farming tools, and a variety of corn planters. In 1965, the Illinois Legislature passed an act creating the Illinois State Fair Agency. The main purpose of the Agency remained what had been the goal of the Fair throughout its history: to promote improved methods of agriculture, encourage increased yields and the raising of improved breeds of livestock, and to acquaint farmers with the latest implements and machinery.

DRIVING QUESTIONS

Possible questions to ask students during the notice and wonderings. List student responses:

1. What animals do you see at a fair?
2. Do these animals produce anything?
3. Why do we raise animals?
4. What type of careers are associated with raising animals?

ACTIVITY

Agriculture is the nation's largest industry, employing approximately 23 MILLION people in more than 250 career areas. In Illinois, food and agricultural product processing contribute significantly to the state's economy, making up more than 13 percent of employees statewide. In this activity, encourage students to explore the career pathways in agriculture.

- Have students research the careers that exist in agriculture, encouraging students to think outside of farming only.
- Generate a list of potential careers with your class. For example, careers in plant sciences, animal sciences, agricultural mechanics, agricultural business, environmental services, food science, and natural resources are all part of the agricultural world.
- Next, have students research a specific career within agriculture. Points of research should include the following:
  - Overview of career
  - Skills needed
  - Work activities common to the career
  - Physical demands of the career
  - Work setting
  - Average wages
  - Employment outlook
  - Licensing and/or certification required
  - Advancement opportunities
  - Education/training costs and length of program
- Have students present their research. This could be done through a paper, a presentation to the class, a student created website, etc.
- To extend the career exploration activity, consider having students write a resume for this specific career and interview someone in this career.

Career Connections
Agriculture

Essential Employability Competency Skills
Communication, Critical Thinking, Planning and Organizing, Decision Making

Academic Standards
Writing Standards, W.9-10.8, W.11-12.8, Reading Standards, RI.9-10.7, RI.11-12.7, Speaking and Listening Standards, SL.9-10.2, SL.11-12.2, Other Possible Standards:, Media Arts

Resources
IL Ag in the Classroom's Agriculture Careers: http://www.agintheclassroom.org/TeacherResources/CareersLB.pdf

GRADES K-4

MAKING BUTTER

WHERE DOES BUTTER COME FROM?

The Illinois State Fair's first butter cow, sculpted in 1922, was the image of an actual champion cow. Sculpting took 12 hours and 1,000 pounds of butter. This tradition continues today.

DRIVING QUESTIONS

Possible questions to ask students during the notice and wonderings.
List student responses:

1. Why did the artist use butter to sculpt the cow?
2. Where does butter come from?
3. Are there other materials used besides butter to sculpt the cow?
4. How are cows cared for?
5. What happens to the butter cow after the fair?

ACTIVITY

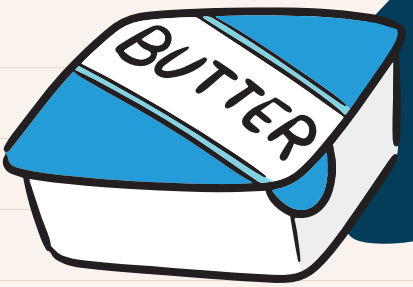
MAKING BUTTER EXPOSITORY WRITING

- Discuss with your class where milk comes from and how milk is made into many products, including butter.

  Show students a video of making butter. Discuss how the cream changes from liquid form to solid.

- As a class, with teams, or individually, have students go through the process of making butter.

- Pour whipping cream into baby food jars until half full and screw on the lids. Then shake the baby food jars.
- Consider adding music while shaking, encouraging students to shake their jar to the beat!
- The butter is done when there is one mound of butter in the center of the jar. There may also be a small amount of clear water, which can be drained off.
- Discuss what happened when making the butter. Complete an expository writing activity telling a friend how to make butter.



Turning butter, or making butter from scratch, is an activity that people do today as a novelty. However, turning butter used to be the only way a family would have access to this basic but widely used food item. In this butter making activity, introduce your students to how people use to get their butter.

Career Connections
Agriculture, Food, and Natural Resources, Arts and Communication, Human Public Service

Essential Employability Competency Skills
Teamwork and Conflict Resolution, Communication: Verbal & Written, Cultural Competence, Planning and Organizing

Academic Standards
CCR.W.2, CCR.W.4, CCR.W.5, CCR.W.6

Resources
National Agricultural Literacy Curriculum Matrix's Better Butter Companion Resource: https://www.agclassroom.org/teacher/matrix/resources.cfm?rid=28
Bright Hub Education's Making Butter in the Classroom Activity Lesson Plan and Step by Step Directions: https://www.brighthubeducation.com/elementary-school-activities/4629-making-butter-in-the-classroom/

GRADES 5-8

BUTTER COW

EXPERIMENTING WITH BUTTER

The Illinois State Fair's first butter cow, sculpted in 1922, was the image of an actual champion cow, the University of Illinois' Raleigh's Sibyl. Raleigh's Sibyl produced **18,847 POUNDS** of milk in 1920, a record at the time.

DRIVING QUESTIONS

Possible questions to ask students during the notice and wonderings.
List student responses:

1. Why did the artist use butter to sculpt the cow?
2. Where does butter come from?
3. Are there other materials used besides butter to sculpt the cow?
4. How are cows cared for?
5. What happens to the butter cow after the fair?

ACTIVITY

EXPERIMENTING WITH BUTTER

- To make butter from the cream, the cream is agitated (stirred up) so that the fat particles get shaken out of position and clump together with other fat particles.
- The clumping first allows tiny air bubbles to be trapped in the cream, forming whipped cream. But if the agitation is continued, the fat particles start to clump so much that the air can no longer be held by the cream, and butter forms.

PROCEDURE

- Show students a video of someone making butter. Watch the video once in its entirety, then rewatch and write out the basic steps that are occurring and the materials used.
- Ask students if they think there is a better or more efficient way to make butter.
- Discuss **variables** that could be manipulated when making butter [e.g., type of container used (glass vs. plastic), size of container, time spent shaking, hot cream vs. cold, adding items in to increase agitation].
- Students will design and conduct their own experiments with the goal of trying to make butter in the most efficient way. Have students analyze and share out their findings with the class.

Butter is made from cream, a component of milk. Cream is lighter than the rest of the milk and floats to the top, where it can be skimmed off and packaged separately. Use this activity to help students understand the science behind butter making.

Career Connections
Agriculture, Food, and Natural Resources, Arts and Communication, Manufacturing, Engineering, Technology and Trades

Essential Employability Competency Skills
Teamwork, Communication: Verbal & Written, Problem Solving, Decision Making, Critical Thinking, Adaptability and Flexibility, Reliability and Accountability, Cultural Competence, Planning and Organizing

Academic Standards
Next Generation Science Standards (NGSS) Physical Science, MS-PS1-3, MSPS1-6, Standards for, Mathematical Practice (MP), MP.4, Mathematics Standards Grade 6 Statistics and Probability (SP), 6.SP.B.4, 6.SP.B.5, Reading Standards for Literacy in Science and Technical Subjects 6-8, RST.6-8.3, RST.6-8.7, Writing Standards for Literacy in History/Social Studies, Science, Technical Subjects 6-8, WHST.6-8.7

Resources
IL Ag in the Classroom's Shake It Up Butter Making Recipe: http://www.agintheclassroom.org/TeacherResources/InterestApproaches/Shake_it_Up_Butter.pdf

GRADES 9-12

BUTTER COW

THE BUTTER COW AS AN ICONIC SCULPTURE

The Illinois State Fair's first butter cow, sculpted in 1922, was the image of an actual champion cow, the University of Illinois' Raleigh's Sibyl. Raleigh's Sibyl produced **18,847 POUNDS** of milk in 1920, a record at the time.

DRIVING QUESTIONS

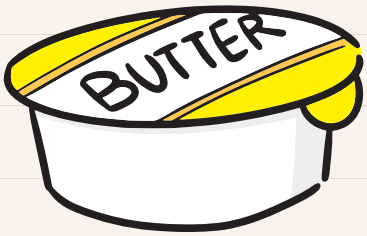
Possible questions to ask students during the notice and wonderings. List student responses:

1. Why did the artist use butter to sculpt the cow?
2. Where does butter come from?
3. Are there other materials used besides butter to sculpt the cow?
4. How are cows cared for?
5. What happens to the butter cow after the fair?

ACTIVITY

The Butter Cow is an iconic component to not just the Illinois State Fair, but also to states such as Iowa, Kansas, New York, and Utah. Have students research the history and significance of the Butter Cow to Illinois. Guide students to consider why the sculpture and the medium (cow and butter) are representative of Illinois.

- After researching the history of the Butter Cow, have students develop business plans in which they pitch a new iconic sculpture for the State Fair or pitch to keep the Butter Cow as that sculpture.
- Ask students to consider the following:
    - What would be sculpted?
    - What would be the medium?
    - How is this concept representative of Illinois?
    - Who would be the artist?
    - What would be the budget for the project?
    - Are there any obstacles to sculpting this particular subject?
    - What waste is created during the project?
    - How sustainable is the project?



- Have students present to the class and choose the winning pitch.

Career Connections
Agriculture, Food, and Natural Resources, Arts and Communication, Manufacturing, Engineering, Technology and Trades

Essential Employability Competency Skills
Communication, Critical Thinking, Planning and Organizing

Academic Standards
Writing Standards, W.9-10.7; W.11-12.7, Speaking and Listening Standards, SL.9-10.1; SL.11-12.1, SL.9-10.4; SL.11-12.4

Resources
Article about Butter Cows at State Fairs: https://www.huffpost.com/entry/butter-sculptures_n_923084
Shark Tank Model of Business Pitch Lesson Plan: https://www.commonsense.org/education/lesson-plans/shark-tank-junior

GRADES K-4

CONSERVATION

GROWING AND CONSERVING TREES

The diversity of habitats and wildlife in Illinois is one of the state's GREATEST assets. However, declining habitat health and availability threaten many of our native wildlife species. Conservation World at the Illinois State Fair features a wide array of hands on activities that educate visitors about the natural and cultural resources throughout the state and the outdoor recreational opportunities in Illinois.

DRIVING QUESTIONS

Possible questions to ask students during the notice and wonderings. List student responses:

1. What are natural resources?
2. What does the word conservation mean?
3. Should natural resources be conserved? Why or why not?
4. What are some challenges to conserving natural resources?
5. What benefits do trees provide to people?
6. What benefits do trees provide to the soil?

ACTIVITY

GROWING AND CONSERVING TREES

Forest and trees cover about 30 percent of the Earth's surface and provide many benefits to the environment. From providing shelter from the sun, to producing oxygen, food, and fuel, trees are a necessary part of the Earth's ecosystem. Lead your students through the lifecycle of a tree and the need for conservation of these vital natural resources.

- Place Silver Maple (helicopter) seeds in a brown paper bag. Do not tell students what is in the bag. Have students put their hand inside the bag and feel.
- Write down the adjectives students use to describe what they feel.
- Have the class vote whether they believe that the objects in the bag are living or nonliving and discuss why they think that.
- Discuss the characteristics of what makes something living. As a whole group, plan an experiment to determine if seeds are living or nonliving.
- Plan your experiment to grow a maple tree from a seed and keep a journal record of its progress, including both sketches and descriptive sentences.
- Throughout the growing and recording period, conduct research around the importance of tees and tree conservation. Students can share out their research, then take the seedling home.

Career Connections
Agriculture, Food, and Natural Resources, Arts and Communication

Essential Employability Competency Skills
Teamwork, Communication: Verbal & Written, Problem Solving, Decision Making, Critical Thinking, Planning and Organizing

Academic Standards
College and Career Readiness (CCR) Anchor Standards for Writing (W), CCR.W.1, CCR.W.2, CCR.W.4, CCR.W.5, CCR.W.6, CCR.W.7, CCR.W.9

Resources
School Sustainability Program: https://onetreeplanted.org/pages/schools-sustainability
Arbor Day in the Classroom: https://www.mortonarb.org/learn-experience/educators/arbor-day-classroom

GRADES 5-8

CONSERVATION

CONSERVATION WORLD

The diversity of habitats and wildlife in Illinois is one of the state's GREATEST assets. However, declining habitat health and availability threaten many of our native wildlife species. Conservation World at the Illinois State Fair features a wide array of hands on activities that educate visitors about the natural and cultural resources throughout the state and the outdoor recreational opportunities in Illinois.

DRIVING QUESTIONS

Possible questions to ask students during the notice and wonderings. List student responses:

1. What are natural resources?
2. What does the word "conservation" mean?
3. Should natural resources be conserved? Why or why not?
4. What are some challenges to conserving natural resources?

ACTIVITY

Conservation World is 30-acre park with grass, shade trees, ponds and picnic tables on the Illinois State Fairgrounds that offers State Fair visitors a chance to relax, enjoy nature, and learn about some great ways to spend time outdoors.

- Use the website Conservation World: At the Fair to show students the different exhibits and activities at Conservation World. Have students read the descriptions individually or consider reading them aloud as a class.
- Assign students in groups or individually one of the exhibits in Conservation World to create a poster/advertisement designed to attract more people to the exhibit.
- Students can create their poster on paper or electronically if they have access to a device. Inform them they will need to include a picture that captures the activity, a slogan to encourage people to visit the exhibit, and a paraphrased quote from the website to explain what the exhibit has to offer.
- Once students have completed their posters, the class can debrief with a gallery walk to identify which poster does the best job encouraging people to attend the exhibit.

Career Connections
Arts and Communication, Human and Public Services, Natural Resources

Essential Employability Competency Skills
Communication Verbal & Written, Critical Thinking, Planning and Organizing

Academic Standards
College and Career Readiness (CCR) Anchor Standards for Reading (R), CCR.R.1, CCR.R.2, CCR.R.4, CCR.R.5, CCR.R.6, CCR.R.7, College and Career Readiness (CCR) Anchor Standards for Writing (W), CCR.W.1, CCR.W.2, CCR.W.6, College and Career Readiness (CCR) Anchor Standards for Speaking and Listening (SL), CCR.SL.1, CCR.SL.2, CCR.SL.5

Resources
Illinois Department of Natural Resources' Conservation World at the Fair: https://www.dnr.illinois.gov/ConservationWorld/Pages/Preview.aspx

GRADES 9-12

CONSERVATION

HUMAN POPULATION GROWTH AND NATURAL RESOURCES

The diversity of habitats and wildlife in Illinois is one of the state's GREATEST assets. However, declining habitat health and availability threaten many of our native wildlife species. Conservation World at the Illinois State Fair features a wide array of hands on activities that educate visitors about the natural and cultural resources throughout the state and the outdoor recreational opportunities in Illinois.

DRIVING QUESTIONS

Possible questions to ask students during the notice and wonderings. List student responses:

1. What are natural resources?
2. What does the word "conservation" mean?
3. Should natural resources be conserved? Why or why not?
4. What are some challenges to conserving natural resources?

ACTIVITY

As the Earth's population continues to grow - with projections that it will hit 11 billion by 2050 - a tremendous strain is placed on natural resources more than ever before. Conservation and careful use of the available natural resources are part of the solution. Guide students in a discussion in which they consider their personal demands on natural resources. Limit to a single resource, such as water, if needed.

- Have students explore the concepts of reducing, reusing, and recycling, either independently or as a group.
- Have them consider the challenges and benefits to conservation and determine their personal approach to conservation. Challenges may include:
    - Lifestyle changes
    - Cost barriers
    - Available alternative resources
- After researching, use the opportunity to have students present their findings to the class. This could be done through a presentation, speech, essay, or something more creative, such as a plan to implement a school or community conservation project. (Have students include their marketing and the financial plans, etc.)

Career Connections
Natural Resources, Arts and Communication, Business and Finance Services

Essential Employability Competency Skills
Teamwork, Communication: Verbal & Written, Problem Solving, Decision Making, Critical Thinking, Planning and Organizing

Academic Standards
Writing Standards, W.9-10.8, W.11-12.8, RI.9-10.7, RI.11-12.7, SL.9-10.2, SL.11-12.2

Resources
U.S. Forest Service's Don't Use It All Up Lesson: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5073084.pdf

ENGLISH LANGUAGE ARTS STANDARDS

Grades K-4	
CCR.W.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
CCR.W.2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
CCR.W.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
CCR.W.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
CCR.W.6	Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
CCR.W.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
CCR.W.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
CCR.L.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
CCR.L.6	Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.
CCR.W.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
CCR.SL.4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
CCR.SL.1	Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
RI.3.10	By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently.
SL.3.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
SL.3.2	Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
W.K.1	Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is...).
W.3.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
W.K.2	Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
W.4.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

ENGLISH LANGUAGE ARTS STANDARDS

Grades 5-8	
CCR.R.1	Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
CCR.R.2	Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
CCR.R.3	Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
CCR.R.4	Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
CCR.R.5	Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
CCR.R.6	Assess how point of view or purpose shapes the content and style of a text.
CCR.R.7	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
CCR.W.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
CCR.W.2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
CCR.W.6	Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
CCR.SL.1	Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
CCR.SL.2	Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
CCR.SL.4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
CCR.SL.5	Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
RST.6-8.3	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
RST.6-8.7	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
W.5.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
WHST.6-8.7	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

ENGLISH LANGUAGE ARTS STANDARDS

Grades 9-12	
CCRA.W.2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
CCRA.W.3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details and well-structured event sequences.
CCRA.W.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
CCRA.W.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
CCRA.W.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
CCRA.W.8	Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
CCRA.W.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
CCRA.R.7	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
CCRA.SL.1	Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
CCRA.SL.2	Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
CCRA.SL.4	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

MATH STANDARDS

Grades K-4	
K.G.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
K.MD.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
K.MD.2	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.
3.MD.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

MATH STANDARDS

Grades 5-8	
MP.1	Make sense of problems and persevere in solving them.
MP.4	Model with mathematics.
MP.8	Look for and express regularity in repeated reasoning.
6.RP.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
6.SP.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
6.SP.5	Summarize numerical data sets in relation to their context. • 6.SP.5.a Reporting the number of observations. • 6.SP.5.b Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. • 6.SP.5.c Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. • 6.SP.5.d Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.
7.RP.3	Use proportional relationships to solve multistep ratio and percent problems.

Grades 9-12	
N.Q.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
N.Q.2	Define appropriate quantities for the purpose of descriptive modeling.
N.Q.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.
N.VM.3	Solve problems involving velocity and other quantities that can be represented by vectors.
MP.1	Make sense of problems and persevere in solving them.
MP.4	Model with mathematics.
MP.6	Attend to precision.

SCIENCE STANDARDS

Grades K-4	
MS-PS1-4	Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed. Clarification Statement: Emphasis is on qualitative molecular-level models of solids, liquids, and gases to show that adding or removing thermal energy increases or decreases kinetic energy of the particles until a change of state occurs. Examples of models could include drawings and diagrams. Examples of particles could include molecules or inert atoms. Examples of pure substances could include water, carbon dioxide, and helium.
MS-PS2-2	Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. Clarification Statement: Emphasis is on balanced (Newton's First Law) and unbalanced forces in a system, qualitative comparisons of forces, mass and changes in motion (Newton's Second Law), frame of reference, and specification of units. Assessment Boundary: Assessment is limited to forces and changes in motion in one-dimension in an inertial reference frame, and to change in one variable at a time. Assessment does not include the use of trigonometry.
MS-ETS1-1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
MS-ETS1-3	Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
MS-ETS1-4	Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.
2-PS1-4	Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. Clarification Statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.
2-LS2-1	Plan and conduct an investigation to determine if plants need sunlight and water to grow. Assessment Boundary: Assessment is limited to testing one variable at a time.
K-LS1-1	Use observations to describe patterns of what plants and animals (including humans) need to survive. Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.
3-LS1-1	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. Clarification Statement: Changes organisms go through during their life form a pattern. Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.
1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).
1-PS4-1	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.

SCIENCE STANDARDS

Grades K-4 (continued)	
3-PS2-1	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all. Assessment Boundary: Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.
3-PS2-2	Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. Clarification Statement: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency. Assessment Boundary: Assessment does not include technical terms such as period and frequency.
4-PS3-1	Use evidence to construct an explanation relating the speed of an object to the energy of that object. Assessment Boundary: Assessment does not include quantitative measures of changes in the speed of an object or on any precise or quantitative definition of energy.
4-PS4-3	Generate and compare multiple solutions that use patterns to transfer information. Clarification Statement: Examples of solutions could include drums sending coded information through sound waves, using a grid of 1's and 0's representing black and white to send information about a picture, and using Morse code to send text.
5-PS1-1	Develop a model to describe that matter is made of particles too small to be seen. Clarification Statement: Examples of evidence could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water. Assessment Boundary: Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles.
K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
3-5-ETS1-3	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
K-PS2-2	Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn. Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.

SCIENCE STANDARDS

Grades 6-8	
MS-PS1-1	Develop models to describe the atomic composition of simple molecules and extended structures. Clarification Statement: Emphasis is on developing models of molecules that vary in complexity. Examples of simple molecules could include ammonia and methanol. Examples of extended structures could include sodium chloride or diamonds. Examples of molecular-level models could include drawings, 3D ball and stick structures or computer representations showing different molecules with different types of atoms. Assessment Boundary: Assessment does not include valence electrons and bonding energy, discussing the ionic nature of subunits of complex structures, or a complete depiction of all individual atoms in a complex molecule or extended structure.
MS-PS1-2	Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. Clarification Statement: Examples of reactions could include burning sugar or steel wool, fat reacting with sodium hydroxide, and mixing zinc with hydrogen chloride. Assessment Boundary: Assessment is limited to analysis of the following properties: density, melting point, boiling point, solubility, flammability, and odor.
MS-PS1-3	Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. Clarification Statement: Emphasis is on natural resources that undergo a chemical process to form the synthetic material. Examples of new materials could include new medicine, foods, and alternative fuels. Assessment Boundary: Assessment is limited to qualitative information.
MS-PS1-4	Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed. Clarification Statement: Emphasis is on qualitative molecular-level models of solids, liquids, and gases to show that adding or removing thermal energy increases or decreases kinetic energy of the particles until a change of state occurs. Examples of models could include drawings and diagrams. Examples of particles could include molecules or inert atoms. Examples of pure substances could include water, carbon dioxide, and helium.
MS-PS1-6	Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes. Clarification Statement: Emphasis is on the design, controlling the transfer of energy to the environment, and modification of a device using factors such as type and concentration of a substance. Examples of designs could involve chemical reactions such as dissolving ammonium chloride or calcium chloride. Assessment Boundary: Assessment is limited to the criteria of amount, time, and temperature of substance in testing the device.

Grades 9-12	
HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
HS-ETS1-4	Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.
HS-PS2-6	Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.
HS-PS3-4	Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

FINE ARTS STANDARDS

Fine Arts Grades 5-12	
Anchor Standard 1	Generate and conceptualize artistic ideas and work.
Anchor Standard 2	Organize and develop artistic ideas and work.
Anchor Standard 7	Perceive and analyze artistic work.
Anchor Standard 10	Synthesize and relate knowledge and personal experiences to make art.

Additional Resources

- View all Illinois Learning Standards at www.isbe.net/Pages/Learning-Standards.aspx.
- Access standards booklets by grade on the Illinois Classrooms in Action website at www.ilclassroomsinaction.org/ standards-books.html.
- Discover more in-demand career connections right here in Illinois through the Illinois State Board of Education's Career Guide at https://online.fliphtml5.com/vvpnp/xnsp/#p=1."

NOTES

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